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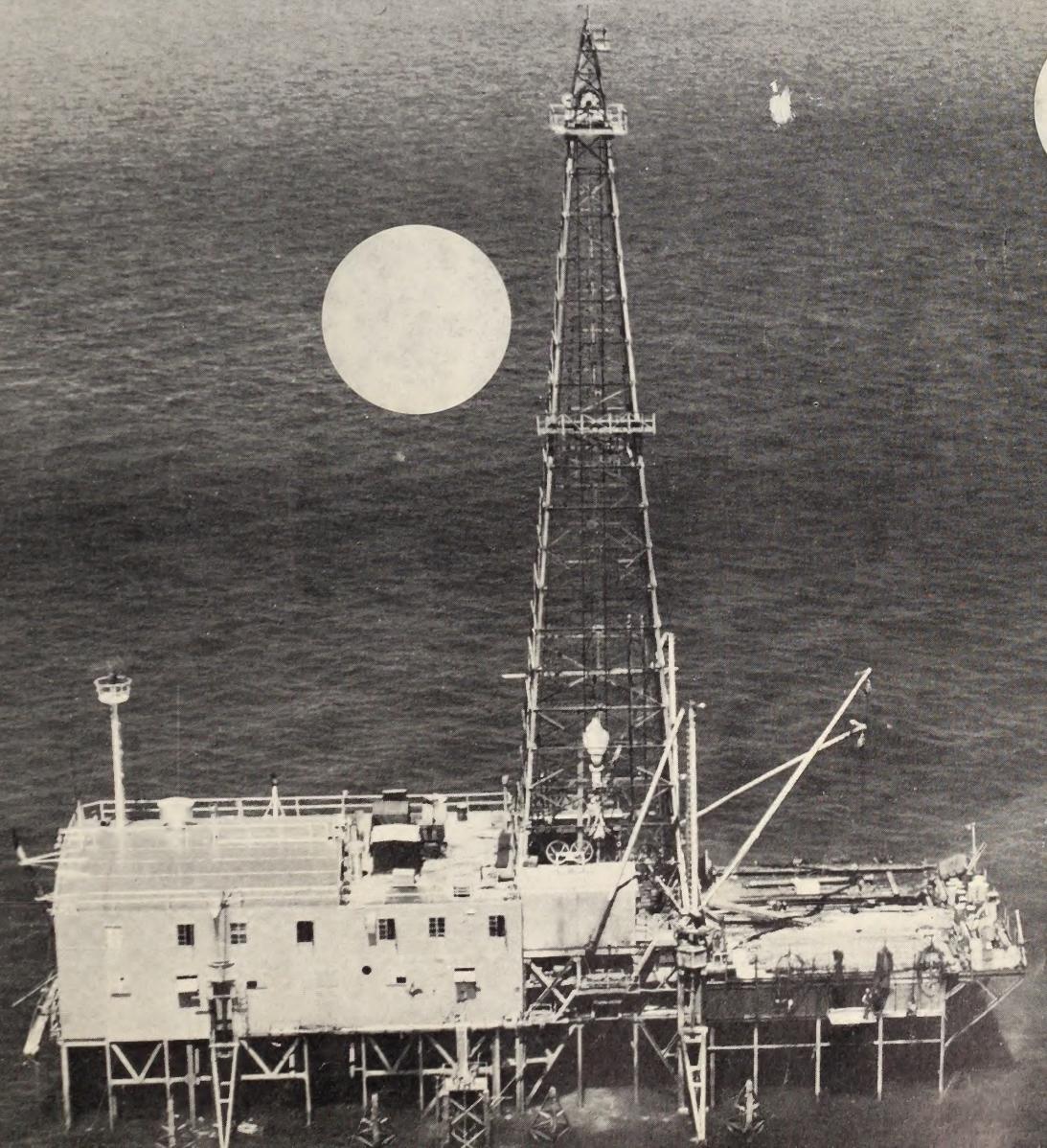
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PUBLIC LANDS

BUREAU OF LAND MANAGEMENT



OUR PUBLIC LANDS . . .



500 million acres of land that belong to us and to our neighbors and to all the people of the United States . . . public lands that are rich in natural resources . . . timber, rangeland, water, minerals, and land for every use . . . "active acres" that must be carefully and wisely managed for the welfare of the Nation . . .

As a forum for the exchange of ideas and information on the development, utilization, and conservation of the resources on public lands, this periodical contains no copyrighted material. If pictures or material are reprinted, a credit line should be given OUR PUBLIC LANDS and the Bureau of Land Management.

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COVER

Even land that is 10 fathoms deep in the Gulf of Mexico comes under jurisdiction of the Bureau of Land Management. Symbolizing BLM's newest cadastral engineering frontier is this deep-water oil drilling apparatus of one of the many major petroleum companies which have been exploring submerged lands off the coast of Louisiana and Texas, and are now extending their explorations to the Outer Continental Shelf. Experts predict these fields eventually will produce 10 billion barrels of oil. BLM's first two lease sales, covering less than 5 percent of the total leasable area, brought \$139,735,505 high bonus bid into the U. S. Treasury—tangible proof of the possibilities. See "Our Newest Frontier—the Outer Continental Shelf" by Sidney M. Groom, Jr., page 12, this issue.

A REPORT ON REORGANIZATION

by EDWARD WOZLEY, Director, Bureau of Land Management

Reorganization of the Bureau of Land Management has become a matter of paramount interest not only to Bureau employees, but to the public. It is primarily for the public that this report is made.

The Bureau of Land Management was formed under Reorganization Plan No. 3, effective July 16, 1946, which combined the General Land Office (established in 1812) and the Grazing Service (established in 1934).



The principal functions of the Bureau are:

Service Functions, which include cadastral surveying and the keeping of public-land records.

Disposal Activities, under the public-land laws, mining laws, and mineral-leasing laws.

Management Duties, with regard to forests under the Oregon and California Lands Act, the range under the Taylor Grazing Act and public lands generally pending final disposal.

As of November 30, 1953, the BLM consisted of a headquarters office in Washington, 7 regional offices, 6 land offices, 8 land and survey offices, 4 survey offices, 53 district grazing offices, and 13 district forestry offices. The heads of local offices reported to the Director through regional administrators.

A six-man survey team was appointed by Secretary Douglas McKay on October 16, 1953, to study the organization and operations of the BLM to find out if there were means, other than those then operative, of accomplishing the work more effectively.

On January 28, 1954, the report of the survey team, recommending a number of organizational and operating

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CAN WE CONTROL HALOGETON?



by ERNEST J. PALMER, Range Conservationist, Bureau of Land Management

During the summer and fall of 1954, BLM made an appraisal of its halogeton control program to determine the good and unfavorable features and to obtain recommendations from others that would aid in improving future work.

The appraisal embraced all halogeton range reseedings (except first-year projects), all forage development projects, and the chemical control work on representative sites in each State.

State and district range management personnel obtained the help of local county extension agents, experts from the Department of Agriculture and State land-grant colleges, key ranchers and others in making the appraisal.

State committees reviewed the appraisal and made reports on their findings. State committees,

selected by State BLM supervisors, were generally composed of one or more representatives from State advisory boards (sheep and cattle representatives), State departments of agriculture, the State extension services and land-grant colleges, State associations of soil-conservation districts, Agricultural Research Service, Forest Service, and representatives of State conservation committees such as the "Keep Idaho Green" Committee and "State Grassland" Committees in other States. A Bureau summary has now been made and is the basis for this article.

Before presenting the results of the appraisal, it may be desirable to discuss briefly the halogeton problem and the BLM control program. Halogeton is a poisonous range weed indigenous to Ru-

HALOGETON. Public Enemy No. 1 of the range, this infestation of halogeton was photographed along road right-of-way near Lovelock, Nev.



Its first known infestation in the United States was identified in Elko County, Nev., in 1934. Since that time halogeton has spread rapidly along road and railroad rights-of-way and through depleted range areas until more than 5 million acres of the Federal range and intermingled lands are infested in Oregon, California, Nevada, Utah, Idaho, Montana, Wyoming, and Colorado.

Halogeton is by far the most serious range weed we have because of its poisonous nature, its rapid spread, and ability to grow under practically all soil and climatic conditions in the West. One of our range managers recently described the spread of halogeton in this way: "Halogeton is so elusive and explosive in its spread that you never know where a new spot will show up next, and it takes constant vigilance to locate these spots before they spread to serious proportions."

A typical example is the new spot infestation that was located in southern Wyoming during the summer of 1954 along the Union Pacific Railroad right-of-way, extending from about 6 miles east of Rock Springs to Walcott Junction, Wyo., a distance of approximately 150 miles.

Serious death losses to sheep and cattle have resulted in local areas but they are being curtailed due to the BLM control program and efforts of livestock people to avoid areas of heavy infestation and provide closer supervision while trailing.

The "Halogeton Glomeratus Act," approved by Congress on July 14, 1952, is the basic authorizing legislation for the BLM control program. This program consists of the following: (1) Surveys to determine areas of infestation and avenues of spread; (2) reseeding depleted sites to perennial grasses in or near halogeton infestations to serve as a barrier to intensive spread, and on infested areas to replace halogeton, and at both locations to produce forage needed for livestock removed from the infested lands not suitable for reseeding; (3) chemical and other direct treatment on small spot infestations to accomplish eradication and along perimeter areas and avenues of spread to prevent seed production and slow down spread; (4) forage development practices such as contour furrowing, water spreading, protection fencings, and good range management to aid in establishing full stands of native vegetation and to provide maximum competition for halogeton; (5) cooperation with the research agencies of the Department of Agriculture and with the land-grant colleges in a research program designed to find better methods of controlling halogeton.

Prior to initiating appraisal of the halogeton range reseeding projects, BLM representatives contacted experts of the landgrant colleges and the Department of Agriculture for assistance in determining the best sampling methods. It was decided that the "Hyder Method" would be used to determine the success of crested wheat grass stands, and that clipping would be made of the actual forage on the project to determine yields.



APPRAISAL COMMITTEE. Idaho committee reviewing John Ward halogeton reseeding at Almo.



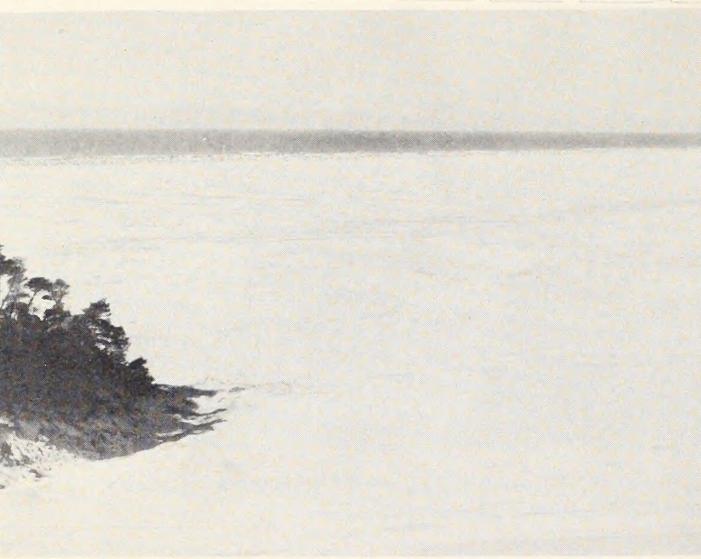
UNDER CONTROL. This seeding of crested wheatgrass in halogeton area has grown with sufficient vigor and density to choke out halogeton.

SECOND YEAR. Halogeton crested wheat grass reseeding of typical infestation that will eventually be crowded out.



While 321,824 acres have been reseeded under the halogeton program since its inception in 1952, it was decided that samplings would not be made of first-year reseedings. This decision was made in order to reduce the time and cost required to

(Continued on page 18)



FOUR YEARS AGO. In September 1950, the sand dunes of the ocean beach across the river from Florence, Ore., looked like this. Pacific Ocean is in background.



FOUR YEARS LATER. In September 1954, the same view was photographed by the author showing the luxuriant stand of beach grass anchoring the sand that formerly blew into Siuslaw River.

REOPENING A RIVER HIGHWAY

by ROYALE K. PIERSON, BLM Range Conservationist, Range Staff Office, Washington, D. C.

In an article entitled "Controlling Oregon Sand Dunes" which appeared in the July 1952 issue of *OUR PUBLIC LANDS*, Leon R. Nadeau, of the area 1 office, described the Bureau's cooperative program for controlling sand dunes on the Pacific coast near Florence, Oreg.

Sand, moving from 1,200 acres of BLM land, had for years choked the lower channel of the Siuslaw River, closing the port of Florence to navigation and creating a serious drainage problem in upstream farmlands.

The first step in controlling the constantly moving dunes was the planting of beach grass, both the European and American species. Beach grass is the only known form of vegetation that can be successfully established in shifting sands. The key to success, however, hinges upon the application of commercial nitrogen fertilizer to the otherwise sterile and infertile sand.

Once established, the beach grasses anchor the sand, enabling conservationists to interplant with a leguminous shrub, Scotch broom, which serves as a continuing supply of nitrogen for nourishing the grass. The Scotch broom also adds height to the planting, further stabilizing the dunes and pro-

viding a suitable environment for the third step of interplanting with lodgepole pine and other native woody species.

The success of the Bureau's cooperative sand dune control problem is graphically shown in the accompanying "before and after" photographs. The "before" pictures were taken in September 1950, 1 year after the first plantings of beach grass were made. The "after" pictures were taken 4 years later, in September 1954.

Encouraged by the stabilized effect of the control plantations, the Corps of Engineers, during the summer of 1954, expended \$35,000 in dredging bars from near the mouth of the Siuslaw River where it flows into the Pacific. Immediately, navigation was resumed into the port of Florence after a closure of many years. Lumber shipments by tidewater from nearby mills soon reached a volume of a million board feet per month.

While the results to date have been quite dramatic, the project is still not completed. About 300 acres of control plantations have been established and at least 250 acres more must be planted for permanent control.

En



SURVEYS SPUR SETTLEMENT

by EARL G. HARRINGTON, BLM Cadastral Engineering Officer

Basic development and settlement of the public lands in continental United States can be historically traced by execution dates of the original cadastral surveys.

Settlement and exploration for minerals generally created the demand for surveys.

The settlers desired title to the lands upon which they had located and no title could pass until monuments were on the ground and the survey accepted. Surveys therefore constituted the first step in the disposal and management of public lands.

From a map compiled by the former General Land Office in 1865, it is interesting to note that up to that time no cadastral surveys had been executed in Arizona, Idaho, Montana, North Dakota, Oklahoma, and Wyoming.

In Utah, a few surveys had been made in the vicinity of Salt Lake City due to settlement of the Mormons in that area.

The few surveys in Colorado were generally in the vicinity of Denver and Colorado Springs as result of gold discoveries in that area.

In New Mexico, surveys had been extended only along the Rio Grande, evidently from demands of the settlers living in that region prior to the date of the Texas annexation in 1845.

By 1865, a fairly substantial portion of California had been surveyed due to the discovery of gold in 1848, settlers' moving into the agricultural areas from the Eastern States, and also demands from the people who were living in the California area prior to the Guadalupe-Hidalgo Treaty of 1848.

Soon after the establishment of the title of the United States to the Oregon Territory in 1846, settlers moved in from the Eastern States either by wagon train or by boat to the rich agricultural lands and timber areas of the Columbia River and Willamette River Valleys, and to the western portion of the State of Washington, thus creating a need for surveys there.

Only a small area in the southeastern portion of South Dakota had been surveyed by 1865 and the western portions of Kansas and Nebraska were still unsurveyed at that time.

After 1865, there was an increased demand to complete the survey of all the western lands suitable for agricultural and grazing purposes. Although the surveys were not limited to specific areas, as was the case in the first surveys executed in the Western States, nevertheless, the date of the survey generally indicated the time that an area was explored for natural resources and when it was settled.

At the present time, due to the discovery of uranium deposits in southeastern Utah, we have started the survey of the rough mountainous area along the Colorado River; areas in which up to this time there had been no demand for, or, in fact, no reason for making the surveys. Similarly, the preparation this past year of leasing maps for oil and gas operations off the coasts of Louisiana and Texas historically marks the date when the Government started to administer the natural resources of the Continental Shelf.

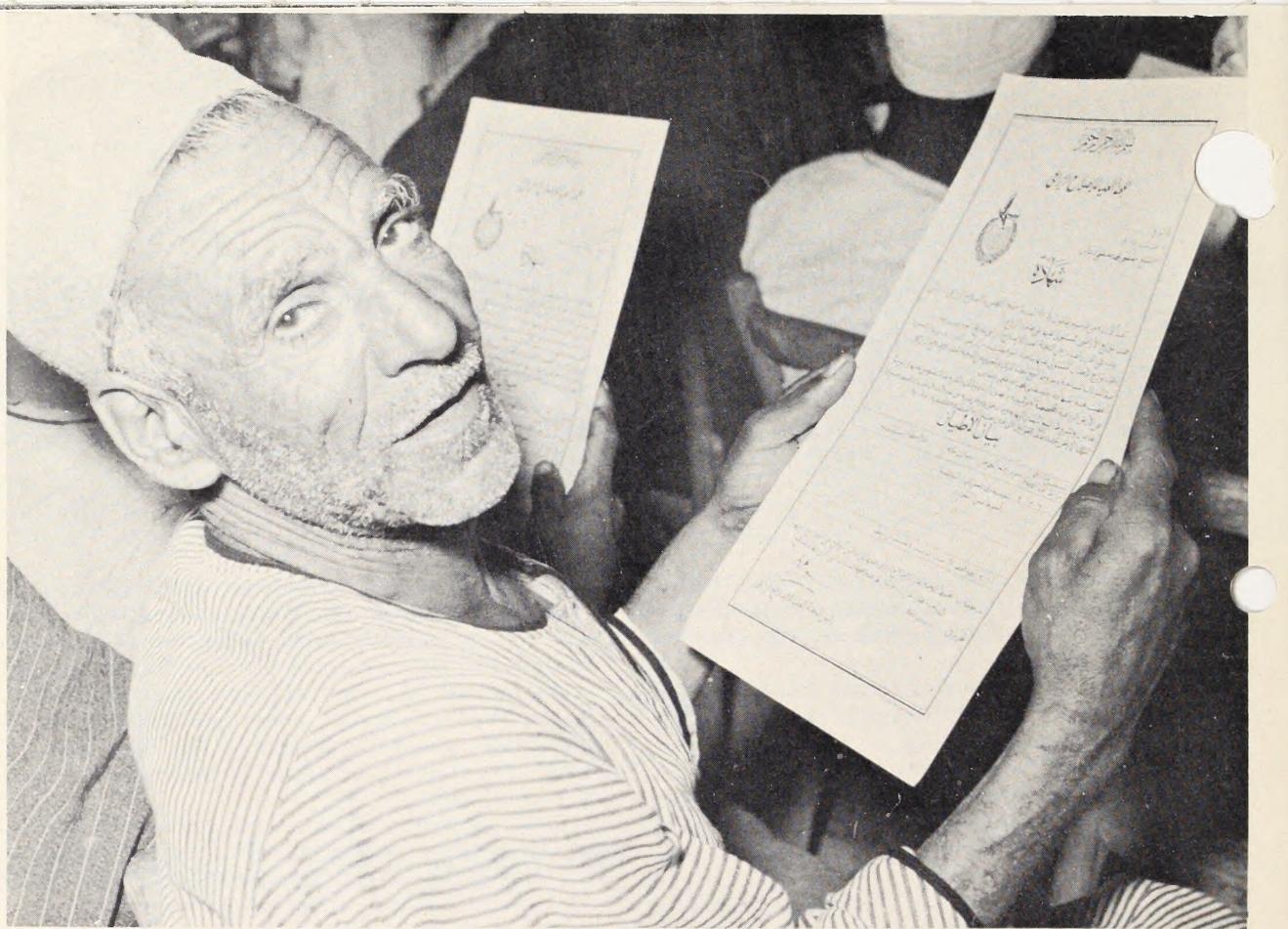
An idea of the living conditions in the areas surveyed, the hardships and dangers encountered in making those surveys, as well as other items of interest, may be obtained from field note records. The following quotations from the field note records of certain surveys executed in Kansas are examples:

"By way of explanation we would state that on or about the 1st of August 1854, we repaired to the field of operations preparatory to executing the contract. On arriving in the field we found our work was immediately in the vicinity of headquarters of the hostile Indians and after skirmishing with us 2 days, they fired the prairies, completely demolishing everything for our cattle to subsist on for many miles, in fact the whole country lying between the Solomon and Republic Rivers, and we were forced to abandon our work.

* * * * *

"At this place a party of Indians fired on me and all my men. Their design was to kill me; they had previously threatened to shoot me and my men if I did not quit surveying there. A shell struck a tree against which I was leaning at that time, while my compass needle was sitting not 6 inches from me."

End



EGYPTIAN FARMER. The certificate he holds in his hands gives him title to land formerly owned by royal family estates. *Ph*
by courtesy of Egyptian Land Reform Administration.

HEAVY population pressures on the land intensify the land problems of Egypt and make them very complicated. Approximately 22 million people and 6 million acres of cultivated lands make for a predominantly agricultural economy, essentially all confined to Valley of the Nile.

The population of Egypt is increasing at one of the highest rates of any country in the world. The presently cultivated area mainly consists of highly productive land, intensively farmed and producing two crops annually.

Methods of solving fundamental land problems have attracted increasing interest since World War II, because they are being recognized more and more as a source of other basic problems. As in most countries, the proper disposal, use, development and management of the public or State-owned lands of Egypt are of primary importance to effective, overall development, stability and security of the individual.

Approximately 97 percent of the 220 million-acre land area of Egypt is in Government ownership. This includes practically all of the lands and other resources outside of the delta and valley of the Nile and about 1 million acres within the valley, only a small proportion of which are developed or effectively utilized.

A large part of the lands outside of the Valley have severe use limitations since they are in the Libyan Desert (Sahara). However, there are substantial areas of public lands in the oases, in the Mediterranean coastal areas, and adjacent to the Nile which are underused. These public lands offer opportunities for substantially increased resource development, especially grazing, forestry, crop, and mineral production.

The economy of Egypt has almost entirely centered in the Nile Valley. For centuries, little consideration was given to the potentialities of other regions. Since the 1952 revolution, however, the Egyptian Government started to give attention to the public lands, in addition to other land reforms. These reforms consist mainly of expropriation, with reimbursement, of the highly developed former royal family estates and distribution of the lands to the fellahin (peasants), reduction in share-crop rentals, and pay increases to farm laborers. Loans and services are provided to assist the fellahin bridge the wide gap from laborer or renter to landowner. To maintain high production is another aim.

One of the major essentials to the future development of Egypt is the establishment of an institutional base which will encourage individual



PUBLIC LAND MANAGEMENT IN EGYPT

by BYRON DENNY, International Cooperation Officer, BLM

(At the request of the Ministry of Finance and National Economy, Mr. Denny was assigned through the Foreign Operations Administration from January to May 1954 to consult with Egyptian officials on public land management policies and organization.)

initiative in the expenditure of labor and capital for land and other resource development outside of the Nile Valley.

Within the valley there is a very detailed system of land ownership records and surveys, clearly defined land policies, land and water use information and other data which have contributed to orderly and rather full development. The limitations and potentialities of the valley are in general well known, and progress on plans for even a greater development of land, water, minerals, and industry is advanced.

The situation is different outside the valley, however. An important factor which must be taken into consideration is the general private ownership of land and public ownership of water in the valley in contrast to the remainder of Egypt where there are in effect no private land holdings even in villages but some individually owned water supplies, principally ground waters. Unlike the valley, the land and water resources in the oases and desert areas are used very extensively. Uses include some tribal grazing, dry land grain production (mainly barley), date and other fruit production, and irrigation from wells. The water in the valley is essentially all from surface sources

while in the desert ground waters are of most importance.

Many ingenious methods have been used to utilize subsurface moisture in the desert for crops, such as use of a cylinder approximately 3 inches in diameter attached to an 8-foot pole to reach the shallower water table and loosening the overburden to permit root penetration for crops such as tomatoes. Another method is to make large excavations to reach the water table mainly for vegetable production. As evaporation reduces moisture, the land in the excavation is generally then planted to date trees.

Even with these extremely laborious ways of making a living on the desert, there is a very striking waste of water and soil, especially in the oases. The wells in the oases are deep flowing artesian. There are many possibilities for better utilizing the water supply from old Roman wells, renovating Roman cisterns, and developing additional ground waters. This development is under way, but there are problems of location and of balancing use with sustained supply.

Claims to the lands in the oases and desert have been developed through custom. This will have

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ONCE ROYAL. Now being distributed to farmers, these lands formerly belonged to Egyptian royal estates.



MEETING. Ohmdahs (heads of villages) confer with Egyptian Government officials in Dahkla Oasis.



BEFORE THE TRUCKS CAN ROLL

by JOHN CLARK HUNT, *Forester, Area 1*



The logger pointed to a distant mountain side reached only by a horse trail. "There's a big block of timber," he said, "but it'll never be logs until a good road is built to haul them out."

To provide access, "to haul out," over 10 billion board feet of BLM timber in western Oregon, which at present is either inaccessible or without adequate roads, the Bureau of Land Management has found that approximately 500 miles of access roads are needed. About 335 miles of the 500 would be mainline access. It is proposed that it be constructed with appropriated funds. Surveys and inventories show that major road projects will be necessary in 23 drainages. Two-thirds of the timber volume in these drainages is federally owned. Construction cost for the 335 miles will exceed \$23,000,000, most of which will go into wages for Oregon labor.

The job of mainline construction is in full swing. One major access road has been completed which will tap 2 billion board feet of Federal and private timber. A second, under construction, will reach more than 3 billion board feet of principally BLM timber.

From fiscal year 1952 through fiscal year 1955 a total of \$8,550,000 has been or will be obligated to active access road projects by October 1954.

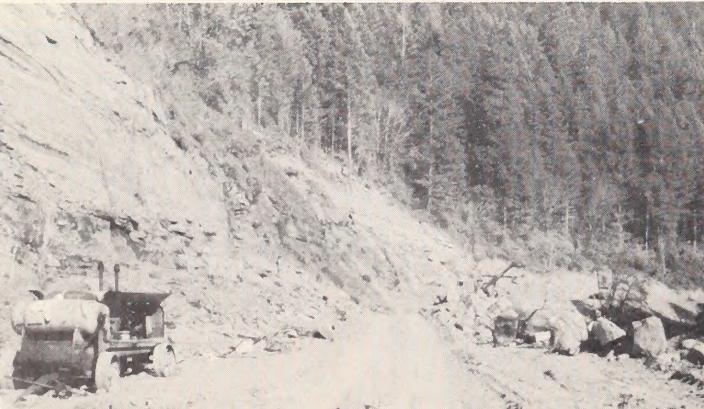
The BLM access road program in the O & C forests is designed to accomplish three major objec-

tives. First, and the most urgent of these, is to reach and salvage as much of the blowdown, beetle-killed and fire-killed volume as possible, and in the shortest time possible. Second, to harvest the mature and overage stands consistent with sustained yield principles in order to prevent deterioration and to increase the yield per acre. Third, and of at least equal importance, is to make timber available to woodworking communities and to provide access into large drainages for fire, insect control, and forest management activities. An important byproduct of these main objectives is the opening of new and virgin country thus affording ready access for local residents and tourists to remote hunting and fishing areas. Reasonable rules providing for public safety have been worked out to the mutual satisfaction of all users.

Because of the high priorities of road construction for salvage, the road projects selected for the last 2 years have been those which will reach the most salvage with the shortest amount of road. These roads were restricted to areas which could not be reached in the course of normal road construction through allowances for cost in timber sale contracts.

A normal roadbuilding job on BLM lands has been in progress for many years through construction by timber purchasers and intermingled timberland owners. However, in terms of total

ROUGH. This stretch of Smith River access road in Oregon required blasting, higher costs.



LOG DUMP. Here logs are "rafted" on the lower Smith River after access road haul.



ed, the job has actually just begun. It will have to go on almost continuously, for a mainline road into any major drainage is only the primary penetration of the area. After that comes the job of building spur roads and usually extensions of mainlines to harvest all merchantable stands.

Thus far, timber sales in the O & C districts have been able to make an actual, hard money return to the public of several dollars for each dollar spent. This has been done in spite of roadbuilding, administrative and forest protection expenses. Fire protection alone in the O & C area (the 18 counties in western Oregon) is now costing approximately \$400,000 per year. Road construction cost will be about \$2,500,000 for 1955 fiscal year, and other expenses will amount to \$1,000,000. In fiscal year 1954 timber sales receipts from the O & C districts were \$12,397,684.57.

The Bureau is charged with the responsibility of managing the O & C lands on a sustained yield basis. Timber and all other resources on both O & C and public domain lands must be protected and administered according to principles of conservation which are in the best public interest. The very foundation of this policy requires that the resources be made available for industrial

utilization and that timber, with minor exceptions, be sold only by competitive bid. To accomplish true competitive bidding there must be opportunity for the purchasers to cut and remove the timber at a fair profit. This means that roads to the timber must be available for use at a fair price for anyone who might wish to buy. Furthermore, regardless of the financing procedure or who builds the road, the timber must amortize the cost of road construction.

In its access road program, the BLM will follow, insofar as conditions will permit, the policy of securing or providing access to all timber in each drainage by the most economical single route. Wherever there is an existing road which is adequate or which can be made adequate, the road will be used if a reasonable agreement can be reached for its use. Where no road exists in a large commercial forest it is essential that a means be found to finance road construction. Painstaking care and considered judgment must be exercised in the location of the road, and in the determination of engineering standards to economically serve the greatest volume of timber, both public and private.

(Continued on page 17)

EASY. Building this stretch of timber access road in the Smith River country of western Oregon was comparatively easy and inexpensive. Photo by author.



RECORDS of the early Land Offices tell a story quite unlike any other, a story of a million joys *** of heartaches *** but all wrapped in the golden aura of the Old West. This story is epitomized in the oft-repeated phrase of Horace Greeley, "Go West, young man."

It was once thought that our land frontiers closed with the West, but we now know this to be far from the truth.

The advent of the gasoline engine ushered in a new era for the West, with industry, mining, cattle, oil and gas, resort areas, and farming becoming the backbone of the West.

During the 20th century, new horizons opened in medicine, physics, chemistry, and engineering. We have experienced the greatest technological advances ever witnessed by man in the brief period of four decades. These identical frontiers of science now make possible another great *land* frontier heretofore relatively inaccessible to man—The Land Beneath the Sea.

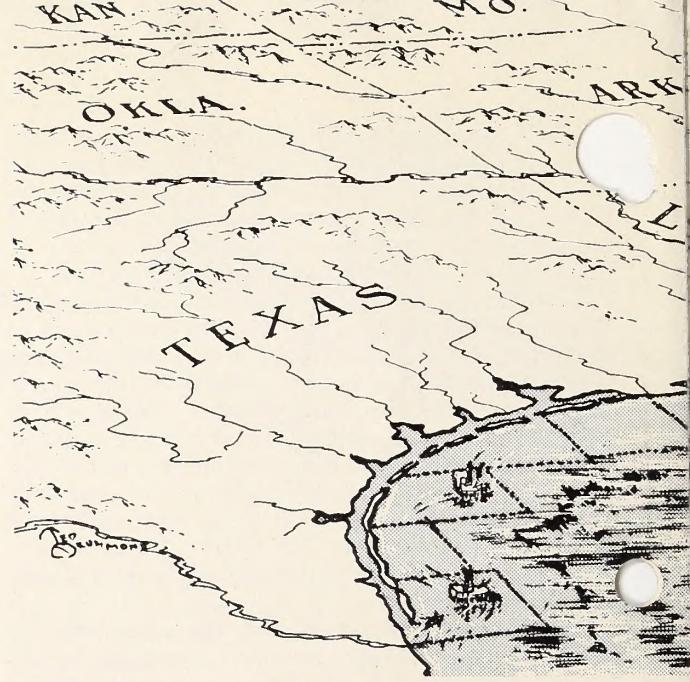
Since time immemorial, man has wrested a living from the sea. In the shallow seas, he has derived material gains from the plant and animal life of the ocean bottoms. The land of the depths, prior to the 20th century, however, remained the dark unknown, the graveyard of ships and animals of the sea. Even the advance of diving techniques, the projected uses of the submarine, and the scientist with his bathosphere studying animal life and plant life of the sea did not furnish the answer to the quest for commercial use of the resources of the sea.

As our resources from the dry land areas became more depleted, this problem became more pressing. It had been determined that the oceans and the lands beneath them contained vast deposits of minerals and plant life so necessary to our growing population, but the recovery of these resources had been considered impractical and uneconomical. Nevertheless, our geologists informed us that it was necessary to find newer sources of strategic minerals, particularly the fuels for our industrial economy.

With our dry land frontiers reaching the exploratory saturation point, the men and women of science turned to the lands beneath the sea—The Outer Continental Shelf.

Preliminary examinations disclosed great possibilities, particularly in the Gulf of Mexico. Ancient seas in the geologic Miocene era deposited vast quantities of salt, leading the geologists to believe, from previous experience in the oilfields of Oklahoma and Texas, that here were oil traps with possibilities of production in excess of 50,000,000 barrels. In areas such as these, it was not too uncommon to encounter 70 feet or more of "saturated pay" as compared with the average "payable" producer with 10 to 20 feet of "pay."

The potential bonanza meant, however, that many natural obstacles must be overcome before the oil and gas could be recovered. A "rig" must



OUR NEWEST FRONTIER

THE OUTER CONTINENTAL SHELF

by SIDNEY M. GROOM, Jr., Manager, Outer Continental Shelf Operations

be constructed which can withstand strong wave action and storms of hurricane velocity, and still be capable of drilling in depths of 30 feet or greater. Wells must be serviced from shore to rig with round trips in excess of 40 miles. The safety of personnel and the provisions for good working conditions are even more difficult when the wells are isolated from shore. If a well should be "completed," the higher transportation costs to the petroleum market and the higher costs of bonuses, rentals and taxes increase the total cost of each barrel of oil, and reduce the net profit.

Nevertheless, the incentive for development was sufficient and the oil and gas industry began its exploratory efforts. The first oil, gas and sulfur leases were obtained in the Gulf of Mexico from the States of Louisiana and Texas.

The obstacles lying in the path of development began to tumble with the knowledge gained from this new generation of "pioneers." Prior to World War II, the oil industry realized the possibilities of the new-found frontier and preparations were made for an extensive exploratory program.



CONTINENTAL SHELF

BLM

Temporarily, the war halted further development, but the oil producing wells off the coast of California raised the problem of ownership. The State of California claimed the lands of the Shelf lying seaward from the line of mean low tide, but this claim was contested by the Federal Government. The question was resolved with respect to California when the Supreme Court in *United States v. California* (1947), 332 U. S. 19,804, held that the United States had "paramount rights" in the "lands, minerals, and other things underlying the Pacific Ocean lying seaward of the ordinary low-water mark on the coast of California."

Shortly thereafter, the Supreme Court, holding to the theory of the California case, decreed that the United States had "paramount rights" in the lands seaward from the mean low-tide mark off the coast of Texas and Louisiana. (See *U. S. v. Louisiana*, 339 U. S. 699, and *U. S. v. Texas* 399 U. S. 707.) In the meantime, Texas and Louisiana issued many oil, gas, and sulfur leases, and industry continued its search for oil, gas, and

sulfur. During this interim period many fields were discovered. Rabbit Island Field, Bay Marchand, Caillou Island, Block 24, South Pass area are among the many fields now in the process of development. Equally important and perhaps more important from the BLM standpoint, other discoveries farther out in the Gulf indicated many more prolific fields. This "black gold" and "yellow gold" (sulfur) are the "brightest jewels in the crown" of the new frontier.

This was the situation which existed prior to May 22, 1953. The 83d Congress pledged that renewed efforts would be made to provide a satisfactory solution to the ownership of the Outer Continental Shelf, and the administration of those lands. The passage of the Submerged Lands Act (the so-called Tidelands bill) on May 22, 1953, and the Outer Continental Shelf Lands Act on August 7, 1953, opened the door to the Shelf.

The Submerged Lands Act vested title in the respective States or their grantees and lessees to all lands beneath navigable waters, seaward from the line of mean high tide to a line 3 geographical miles (1 marine league) from the coast, or to the "historical boundary" line of such State where that line is beyond 3 geographical miles.

The Outer Continental Shelf Lands Act provides for the exercise of Federal jurisdiction over lands which lie seaward and outside of the area vested in the States by the Submerged Lands Act. It is this land that is now denoted as the Outer Continental Shelf.

The OCS Lands Act also provides that the Secretary of the Interior shall administer the leasing of the Shelf. Regulations were issued augmenting the provisions of the act relating to leasing, the validation of mineral leases issued by the States under section 6 of the act, and other pertinent provisions.

Thereafter, the Secretary of the Interior delegated to the Director, Bureau of Land Management, the administration of mineral leases, with the Geological Survey's being responsible for the technical operations and enforcement of conservation measures. From time to time, the Director may offer, through competitive sale, certain areas of the Shelf for leasing, either upon his own motion or by accepting nominations of areas desired for leasing.

Under a recent delegation order, the Director delegated his authority for the administration of these leases to the Manager of the Outer Continental Shelf Office, authorized on May 28, 1954, by the Administrative Assistant Secretary as a new BLM Office for the administration of OCS lands. The office is located in New Orleans, La. At the same time, the Geological Survey established its gulf coast regional office in New Orleans.

In the entire history of the General Land Office and its successor, the Bureau of Land Management, this is the first land office established solely for lands partially or completely inundated by the

(Continued on page 17)



SECRETARY LAUDS DUNE PROJECT

Director Edward Woozley recently received the following note from Secretary of the Interior Douglas McKay:

"Assistant Secretary Lewis and the Technical Review Staff have called my attention to the splendid accomplishment the technical personnel in your Bureau have achieved, in cooperation with the local people, in stabilizing the sand dunes at the mouth of the Siuslaw River near Florence, Oregon.

"I want to commend you and, through you, the employees who conceived and carried out this worthy project. Stabilizing the dunes was a difficult technical task which has resulted in great economic benefits as attested by the fact that the river channel is now stabilized and again carrying lumber on barges after a lapse of many years."

For a detailed description of the successful sand stabilizing project, together with "before and after" photographs, read Range Conservationist R. K. Pierson's interesting article on page 6. Also, Artist Ted Drummond has devoted his back-page drawing to the subject, now that he has completed his popular activity map series.

50 YEARS OF FORESTRY PROGRESS

BLM comes in for a modest share of recognition for services rendered to the cause of forestry as the U. S. Forest Service celebrates its golden anniversary.

C. W. Mattison, forestry education consultant for the USFS, reminds us that the Forest Service was created in its present form in the Department of Agriculture on February 1, 1905, through merging forestry divisions of the General Land Office with the earlier Bureau of Forestry.

"As it marks the 50th anniversary of its establishment by the American people," says Mr. Mattison, "the Forest Service salutes the State forest departments, forest industries, the forestry schools, conservation organizations, and all forest land managers—private and public alike—which have helped to make noteworthy progress in forestry."

Several other Federal agencies besides the Forest Service are also concerned to some extent with forestry matters," a golden anniversary pamphlet points out. "The Bureau of Land Management, Bureau of Indian Affairs, and National Park Service of the Department of the Interior have active forestry units that have contributed to forestry's half century of progress."

BLM forestry personnel join in congratulating to U. S. Forest Service on its 50th birthday.

FILIPINO CHIEF OF LANDS HERE

The WYOMING EAGLE, Cheyenne, Wyo., carried an article from an interview with Alejo M. Manalang, Chief, Lands Division, who has been observing BLM administrative methods firsthand in Washington, D. C. Mr. Manalang has in mind eventual installation of a decentralized public land bureau in his home country.

An integral part of the policies of the Philippine Government is expediting ownership of public lands by the landless. He indicated that the Bureau of Lands distributed 50,000 parcels last year to persons who never before had owned land.

Mr. Manalang explained the unique problem facing the Philippines Land Bureau in that there has never been a precise definition of what is public land and what is private.

"Everyone in the past has held squatter's rights and an attempt to reorganize the land system and facilitate equal distribution is a difficult job.

"We have long been aware of the decentralization achieved by America's Interior Department and land bureaus and feel that it is the most efficient of any systems. We want a program patterned after it in the Philippines. Other far eastern countries find this difficult to understand. But if they could, I am sure they would be much less hostile in their feelings," Mr. Manalang said.

The Bureau of Lands in the Philippines and the Bureau of Land Management, United States of America, have been working together for several years on mutual land problems. Jose Dans, the former Director of the Bureau of Lands who worked with the cadastral surveyors in the United States from 1908 to 1915, was a recent visitor to the Bureau. Zoilo Castrillo, the present Director of the Bureau of Lands, visited the Bureau of Land Management in June 1953. Jose Suguitan, Chief, Division of Surveys, Bureau of Lands, recently completed 6 months' observation of the Bureau of Land Management's work. Vicente Valdellon of the Philippines, Bureau of Lands, and Nicanor Jorge, professor of geodesy at the University of the Philippines and consultant to the Bureau of Lands, each spent a year working with the Bureau of Land Management. Leonard Berlin, area cadastral engineering officer of Juneau, Alaska, worked with the Bureau of Lands in the Philippines on two separate assignments since 1951.

Mr. Manalang was on 6 months' assignment with the Bureau of Land Management as a participant in the Foreign Operations Administration's technical exchange program.

WHAT ABOUT SILVICIDES?

Another revision of "The Practice of Silviculture" by Ralph C. Hawley and David M. Smith has recently been published by John Wiley & Sons, Inc., New York. This sixth edition is considerably larger than the last edition published in 1946. It contains a great deal more economic analysis of various silvicultural methods, pointing out quite forcefully that we in this country are perhaps too preoccupied with gaining control of our wild or virgin forests to the neglect of values present or inherent in second-growth stands. As a result the growing stock of our second-growth forests has some serious deficiencies in either stocking or species composition.

A new subject is introduced in this edition—the application of "silvicides" or the use of various chemicals to kill the weeds of the forest. This may prove interesting to foresters faced with clearing away uneconomic species prior to the establishment of a paying crop.

As in many books on silviculture the authors cover the entire field, much to the regret of many practicing foresters who would like to see some specialization by the present-day forestry authors. A book, as well written as this, but oriented to the

silviculture of one particular region or forest type would be received with open arms by the practicing profession as well as the colleges and universities.—G. C. Francis.

MORE DECENTRALIZATION

Bureau Order No. 562 outlines a new procedure for filing applications covering public lands in the States of North and South Dakota, Nebraska, Kansas, and Oklahoma.

Applications for lands in the Dakotas are now being filed in the land office at Billings, Mont.; applications for lands in Nebraska and Kansas, in the land office in Cheyenne, Wyo.; and for lands in Oklahoma, in the land office at Santa Fe, N. Mex.

In recording these applications the State prefix of the receiving office is used, followed by the regular serial number sequence of the office. The State in which the lands are located is shown in parentheses immediately following the serial number. Serial register sheets are prepared in the usual manner. Sufficient basic records have been made available to the land offices so that it is no longer necessary to refer these cases to the Washington office for status or posting.

This is another step toward complete decentralization to the field offices.

TIMBER SALE IMPROVEMENT

Recently Secretary McKay approved a change in the O & C timber sales regulation which shows promise of saving the Government several thousands of dollars.

Prior to this amendment, the Bureau could not make a sale of timber of Federal access road rights-of-way without advertising and calling for competitive bids. In some instances this resulted in two contractors being on the roadway at the same time—the roadbuilder and the successful timber purchaser. In areas of relatively easy terrain this did not present a great many difficulties even though the liability for trespass damage from fire or other causes was certainly confused by two contractors working in the same area. In steep, rough country the story was different. If the right-of-way timber had to be cold-decked for later sale the road constructor had to provide space along the roadway to store the logs or skid them long distances to a suitable landing. This increased his cost of construction and caused deterioration of the wood.

Recognizing this problem, area I requested a change in the regulations permitting sale of this right-of-way timber by negotiation. The Bureau of Public Roads estimates that savings of upward of \$4,000 to \$5,000 per mile can be realized in rough terrain if this procedure is used.

End

A REPORT ON REORGANIZATION

(Continued from page 3)

changes, was approved by Secretary McKay.

What has the Bureau done in slightly less than one year toward adopting these recommendations?

It has made excellent progress in carrying out all of the recommendations of the Secretary's survey team and has fully executed most of them.

The main recommendation—and one almost completely fulfilled—is the reorganization of the Bureau. The Bureau of Land Management now comprises the headquarters in Washington, D. C., a field organization of three areas in the United States and one in Alaska; 11 State offices with an Eastern States office in Washington, D. C., for all States east of the Mississippi River and Arkansas, Iowa, Louisiana, Minnesota, and Missouri; 12 land offices in the United States and 2 in Alaska; 51 district grazing offices and 10 district forestry offices in the United States and 3 in Alaska. The Director is the chief executive of the Bureau. The line of authority extends to the area administrators and in turn to the State supervisors and the heads of the various district offices.

HEADQUARTERS ORGANIZATION

The Director, assisted by an Associate Director, Executive Officer, and Assistant to the Director, directs and supervises all activities of the Bureau.

In general, the Office of the Director is concerned with the development of program objectives, policy formulation, and direction of the activities of the entire Bureau.

In addition, the Office of the Director advises and assists the Assistant Secretary, Public Land Management, on land matters and maintains relationships with other parts of the Federal Government in order to facilitate carrying out the Bureau objectives.

FIELD ORGANIZATION

Field administration is divided among four geographic areas, each one of which is under the direction of an area administrator who is responsible to the Director for supervision and coordination of all activities of the Bureau in his area.

The area administrator coordinates long-range programs of the various States in his area for the conservation and utilization of the land and its resources.

As far as needed, each area office has administrative and engineering staffs, whereas for lands, minerals, forestry, and grazing the staffs are supervisory.

Except for certain functions which can be conducted most efficiently only on an areawide basis, the responsibilities of the area office are of a supervisory, control nature. The operating activities of the Bureau are conducted directly through State and district forestry grazing and land

offices. Each State has a staff supervisor and operating staff for lands and minerals, grazing, and forestry.

PROCEDURES

Bureau Order No. 559 established a new procedure for handling appeals.

Bureau Order 562 outlined a new procedure for filing applications covering public lands in the States of North and South Dakota, Nebraska, Kansas, and Oklahoma.

Applications for lands in the Dakotas must now be filed in the land office at Billings, Mont.; for lands in Nebraska and Kansas, in the land office at Cheyenne, Wyo.; and for lands in Oklahoma, in the land office at Santa Fe, N. Mex.

Sufficient basic records have been made available to the land offices so that it is no longer necessary to refer these cases to the Washington office for status or posting.

This is a vital step forward in our goal of complete decentralization to the field offices.

RECORDS

The Bureau is the custodian of tract books, plats, patents, and other files which constitute the basic title records of all the public domain lands, past and present. Many of these records are in poor physical condition and the system of record keeping has been recognized as being antiquated. Use of many of the records is difficult, if not impossible, by any save those intimately familiar with them.

The records of lands acquired by the Federal Government, other than public domain lands, have posed a special problem. Although the Bureau is charged with certain duties with respect to these lands, not all of the records of title are in its possession.

Several plans for the maintenance of land records were brought to the attention of the survey team. No evaluation by the team of the several plans was possible.

After much study, and with the help of expert advice, a plan for the revision of the basic land records of the Bureau was developed and accepted for adoption, contingent on funds being made available by the Congress. The plan was devised so that it can be adopted in whole or in part, and installed progressively over a period of from 3 to 5 years. The new system includes three groups of records: the control document index, the master title records, and the work use and title records.

Development of the second and third groups is dependent upon the basic data which the first group will contain. We have included in the proposed budget for next year an item sufficient for accumulating all the basic data necessary, following which we will embark on a pilot installation in one of the land offices.

End

R NEWEST FRONTIER

(Continued from page 13)

sea. The sole purpose of this Office is to aid and abet the development of the mineral resources of the Shelf.

On August 1, 1954, BLM's OCS office in New Orleans officially opened for business. The routine administrative problems, such as personnel, equipment, supplies, etc., were encountered, as with the establishment of any new office, but the most important duty was to prepare for the first lease sale. On June 14 and June 30, 1954, the Director called for nominations for oil and gas leases and sulfur leases off the coast of Louisiana and Texas. The sale dates were set for October 13, 1954, for lands off the coast of Louisiana, and for November 9, 1954, for lands off the coast of Texas.

Immediately, the geophysical crews of various major oil companies and independent companies set to work on the more promising Shelf area. It is estimated that during the month of July approximately 40 crews were "shooting" in the Gulf of Mexico. On September 9, 1954, the areas off Louisiana to be offered for oil and gas leasing were published in the Federal Register. Likewise, on September 11 and September 17, 1954, the areas off Louisiana to be offered for sulfur leasing and the areas off Texas to be offered for oil and gas leasing were published in the Federal Register.

The large number of inquiries and requests by industry regarding the mechanics of sale procedure indicated that the competition would be "heavy" at the first lease sale. Prior estimates of total bonus bids ran from \$10,000,000 (this was the imprudent guess of the writer) to \$75,000,000. Actually, the total high bonus bid at the October 13 sale was \$129,527,476, an amount far exceeding the estimates. This amount resulted from bidding on 97 tracts for a total 417,221.16 acres. The Texas sale brought \$23,357,029 for only 19 tracts.

The total offering at the Louisiana oil and gas lease sale was 702,180.12 acres divided into 180 tracts. Thus, more than 50 percent of the tracts offered at the sale received bids.

The sulfur leasing conducted on the same date did not receive so great a participation, but the total bonus bids did amount to \$1,233,500 on five tracts for a total of 25,000 acres.

The estimated potential reserves of our offshore oil resources in the Continental Shelf, including the submerged lands, lying seaward off the coast of California, Louisiana, and Texas, are a little more than 12 billion barrels, as compared with the total of 33.7 billion barrels of proved reserves for the "dry land" area of the entire United States.

The estimate of natural-gas reserves in the same area is around 68.5 trillion feet, with an estimated sulfur reserve of 120 million long tons.

Approximately 304 oil wells are already producing on the submerged lands and the OCS, with an

(Continued on page 22)



BIG STICK. Typical use of logging access road.

BEFORE THE TRUCKS CAN ROLL

(Continued from page 11)

In some situations this will mean the use and extension of privately owned roads, in others the use of county roads. In still other areas, where the construction project will cost a large sum of money, Federal development with appropriated funds will be the only satisfactory solution.

Where BLM timber is dominant, and where the length and expense of road construction to the first timber sale area is high, it is reasonable to assume that these expensive mainline roads will be built by the Federal Government. To require a multimillion dollar road to be built by the timber purchaser would limit the number of purchasers to a very few and would require the commitment of tremendous volumes of timber to those few purchasers to pay for the road. Thus, competition would be effectively retarded and the opportunity for other operators to purchase BLM timber for a period of years would be limited, if not precluded when tributary to such a road.

The BLM transportation system plan has been designed to take into account the various situations and the type of access which would best fit each case. But in all cases, regardless of the class of access, the road must be open to all prospective purchasers of BLM timber.

BLM timber sales are managed in a manner not only to permit but to encourage open competitive bidding for the timber under its administration. Furthermore, to the extent that good forest management and good economics will permit, stumpage is offered in the size of sales and under terms and conditions which assure opportunities to timber buyers of any size, be they medium, large or small, to obtain some of the available supply.

End

CAN WE CONTROL HALOGETON?

(Continued from page 5)

make the appraisal and because it is frequently quite difficult to determine the success of crested wheat grass reseedings, especially in dry years, until the second or third year.

Based on the "Hyder Method" of scientifically sampling 78 second and third year reseedings in Oregon, Nevada, Idaho, and Utah, the following ratings were made:

Excellent	79,109 acres—33 percent.
Good	45,155 acres—21 percent.
Fair	42,765 acres—19 percent.
Poor	33,297 acres—15 percent.
Failure	23,328 acres—12 percent.
Total	219,654 acres

Appraisal and inspection committees believe that the percentage of good and excellent acreage will increase as the reseedings mature and become established. In the drier areas experience has proven that it may take 3 or 4 years or even longer before the stand is fully established. In the past, projects that have been rated as near failure on first- or second-year inspections later proved to be quite successful.

In general, localized drought conditions and poor site selections were the main reason for the lower ratings. Small spots or areas were found that are unsuited for grass production but due to their irregular size and shape and location within the project it was difficult to get contractors to avoid plowing these spots. These comparatively small areas account for most of the acreage that was rated a failure.

The forage production and grazing capacity of second- and third-year reseedings as compared to the grazing capacity of the same area prior to reseeding is as follows (78 projects in Oregon, Nevada, Idaho, and Utah):

Total acres in projects appraised—219,654.

Present total pounds forage produced on projects—25,007,090.

Estimated ultimate forage production on projects—46,337,500.

Average grazing capacity in acres per AUM prior to reseeding—26½.

Total AUM's produced prior to reseeding—10,421.

Present total AUM's produced by reseedings—31,333.

Estimated ultimate production in AUM's for reseedings—54,452.

Ultimate average grazing capacity for reseedings in acres per AUM's—4½.

Estimated increase in total AUM's—43,131.

The John Ward reseeding of 1,203 acres at Almo, Idaho, is a good example of what happens in converting a highly depleted halogeton infested area into a reseeding. Apparently this area has been overgrazed for years with the result

that the grazing capacity had almost been completely destroyed. BLM range surveys rated grazing capacity at 200 acres per AUM or a production of 4 pounds of forage per acre. In 1952, Mr. Ward reseeded the area to crested wheat grass in cooperation with the State Department of Agriculture and the Bureau of Land Management. In 1953, a good stand of crested wheat grass seedlings came through but a thick stand of halogeton reappeared. In 1954, the crested wheat grass was definitely crowding halogeton out and the grass yield was 427 pounds of usable forage per acre or 1.8 acres per AUM.

Experience and research work have proved that annuals cannot successfully compete with vigorous, full stands (closed perennial community) of perennial vegetation. In the BLM halogeton reseeding and forage development projects, the objective is to develop the necessary perennial vegetation and manage it in such a way that halogeton will be controlled. The success of a perennial grass community in preventing invasion by annual plants depends on distribution of the plants in uniform space allowing only a minimum of interspaces, nature of the plant associations with root systems to offer maximum competition, growing season habits of the plants in the community in relation to annual plant invasion habits, and fluctuation in annual precipitation and its relation to the ability of a plant community to close the door to invasion. Plant communities that can be considered closed in extremely dry years and offer sufficient competition to reduce annual invasion in a normal year may be rated open to invasion in extremely wet years.

Inspections made by the appraisal and reviewing committees of BLM range reseedings conclusively prove that vigorous, full stands of crested wheatgrass will prevent invasion by halogeton and also crowd out any halogeton that was on the site prior to reseeding.

This conclusion substantiates earlier findings based on limited plot studies and observations of the effects of the first range reseedings made in halogeton infested areas. It is especially important in supporting range reseeding as the method of permanently controlling halogeton and adds confidence in the work accomplished to date.

The history of most halogeton reseeding projects is about as follows: The first and second year after reseeding, depending upon the extent of halogeton on the site, halogeton is fairly dense; beginning the second year the perennial grass begins to crowd out halogeton; and during the third or fourth year halogeton is controlled. The percentage of halogeton from that time on gradually diminishes.

Effectiveness of range reseedings in Idaho in crowding out halogeton is summarized as follows:

Percentage of halogeton on project land prior to reseeding—10 percent.

Percentage of halogeton on project land first year after reseeding—15.1 percent.



HALOGETON. Burned-over sage area near Wells, Nev., proves fertile ground for halogeton invasion.

Percentage of halogeton on project land second year after reseeding—15.7 percent.

Percentage of halogeton on project land third year after reseeding—3.3 percent.

Estimated percentage of halogeton on project at time of maturity—1 percent.

Some of the inspections made in Utah show the following: Benmore L. U. pasture, with a density between 10 and 15 percent and seeded 4 years ago had a closed community to annual plants in 1954. The areas of lower density show a trace of annuals (mustard and cheat grass). It is believed that this project would be open to invasion by annuals during wet years. Benmore L. U. crested wheat grass pasture, with 35 to 40 percent density and uniform plant spacing, was completely closed to invasion by annuals. Benmore L. U. pasture, with a density of 20 to 30 percent and good spacing and distribution of plants, is completely closed to invasion by annuals. Little Valley reseeding, with densities of 25 to 40 percent and good plant distribution, has been closed to invasion by annual plants for the last 8 years. Annuals were kept out during both dry and wet years in the moisture cycle.

Inspections made in Nevada also prove that successful stands of crested wheat grass will control halogeton.

Reseeding costs per acre for Oregon, Idaho, Nevada, and Utah, including fencing, are averaging \$8.15 per acre.

Appraisal and inspection committees in Oregon, California, Nevada, Utah, Idaho, Montana, Wyoming, and Colorado found varying results in the chemical control program of the BIM. In some areas an excellent kill on halogeton had been obtained by spraying with 2, 4-D and water and with formulations of 2, 4-D, water, and diesel,

stove, or Dinitro oil. Best results were generally obtained when oil was added to the mixture. One of the best formulas used was Heavy Ester 2, 4-D at 2 pounds per acre; and diesel oil and water 1 to 10 ratio per acre; DuPont sticker spreader 1 pint to 250 gallons of solution.

It was found that excellent results could not be obtained from chemical control unless a conscientious effort was made to kill all plants each year. Best control was obtained when several applications a year were applied during the early stage of development of the plant (either the cruciform stage or early elongation stage, or several weeks before the plants came in bloom). Failures were traced to one or more of the following: Poor formulations, poor application of the chemicals to the plants, poor timing in applying the chemical, or failure to treat the infestation as often as needed each year until the plants were destroyed.

Exceptional results were obtained in a few areas that were sprayed where grazing was restricted or eliminated. In these cases, the 2, 4-D killed the halogeton, and the native grasses not hampered by grazing came back to offer full protection against any further infestation by halogeton. In areas where a good job of chemical control was accomplished, several spot infestations were eliminated and others have been controlled to the point where elimination will be possible in a year or so if conscientious control measures are continued.

Some difficulties and shortcomings of the spray program have been noted. In certain areas in Utah, halogeton begins growth very early in the spring, and it is possible to have four crops of halogeton per year. Under these conditions it appears that it would be necessary to start the spray program in May and continue as often as moisture conditions bring on a new crop of halogeton seedlings or until frost kills the plants.

Due to the erratic germination of the halogeton seed, it is difficult to get a 100 percent kill each year unless sprayed several times during the growing season. The average cost per acre for each treatment varies from \$3.50 to \$4.50, and the minimum number of treatments in any State per season would be two treatments. In some areas where it takes at least four applications per year the cost would be as high as \$14 to \$18 per acre. Since treatments may have to be continued for several years to obtain complete kills, the cost of chemical control is expensive.

Chemical control is too expensive and ineffective to use on large scale infestations, except possibly along perimeter areas and avenues of spread leading from major areas of infestations.

In areas where sage brush, shade scale, salt sage, and other desert type shrubs make up the plant community, it is impractical to use 2, 4-D because many of these shrubs are killed by the treatment. This leaves the ground bare and much more susceptible to reinvasion by halogeton.

(Continued on page 22)



"HOMESTEAD". Director Aly Serour, State Domains Administration of Egypt, with farmer who settled and developed land on Mediterranean Coast west of Alexandria.

PUBLIC LAND MANAGEMENT IN EGYPT

(Continued from page 9)

to be adjudicated before a reliable land ownership system can be established. Cadastral survey and land use classification systems are needed to insure stability and best use of the available resources. Because of the size of the areas involved and the much lower land values, these need not be so intensive as practiced in the valley. The customs and experience in the use of land which have developed in over 2,000 years merit serious consideration, but it is apparent that some of them will have to be modified for full development.

These institutional factors affecting the distribution and use of land will require a long time to work out completely. This time factor is the usual difficulty encountered in handling basic land problems. A start is being made, however, which will go a long way in meeting an immediate goal to improve conditions for the present population outside of the Nile Valley.

Eventually the attack on the land problems in this large area should result in some reduction of the population pressures within the valley. There has been considerable migration from the oases and desert to the valley, but already some Egyptian leaders see possibilities for reversing this trend.

Largely because of the need for protection, the village and tribal systems of living predominate. The need for protection is diminishing and evidences of individual initiative in the development of homesteads are found. One area where this is beginning to show is a narrow strip for about 65 miles along the Mediterranean coast from Alexandria west to El Alamein. An accompanying

photo shows the results attained on one such farmstead.

Squatters have been settling on the lands in this arid coastal area. An adjudication of their claims might provide a basis for valid titles depending upon the policy followed. These settlers have dug shallow wells about 10 to 20 feet from which they hand water fig and other fruit trees and vegetables. There are several evidences that this practice has moved gradually westward from Alexandria and that it will continue. If it were guided through land use classifications, however, and other rather inexpensive services were provided, such as issuance of bona fide titles to the settlers who in good faith have improved and resided on or near the land, there would be a solid foundation for the settlement. With more inducements, the development should expand faster and in a more orderly fashion.

Many improvements are being made in the administration of the public lands of Egypt. There are striking similarities between that country and some stages in our own public land history. The State lands of Egypt are divided into a private domain and a public domain. The private domain consists of the bulk of the lands which are subject to lease and disposal. The public lands are in effect comparable to our reserved lands withdrawn from disposal and set aside for public purposes.

Management of the public lands in Egypt has emphasized revenue. These lands are administered by the State Domains Administration in the Ministry of Finance and National Economy. This Administration performs a wide variety of functions. Some of these are sale of land, the management of improved lands through tenants and contract labor, and development activities, including the construction of homes and community facilities in villages, the construction of lateral canals and drainage ditches for irrigable lands, land leveling and the establishment of crop rotations on new lands being brought into production.

The State Domains Administration also has tax collection, loan guarantee, sales and leasing of a large number of very valuable municipal lots, social welfare, tree rental principally fruit, and many other responsibilities. Cadastral survey, mineral lease and disposal, and water development are handled mainly by other agencies. The policies and organization are in many respects similar to those of the predecessors of the Bureau of Land Management when the public lands agencies were in the Treasury Department. There is considerable syndication of lands and minerals for development in Egypt somewhat similar to our early practices.

The use of special contracts and agreements in the disposal of land and minerals in the private domain is predominant. These include many features for the protection of the general public interest. As the public land policies and procedures become firmer, a wider use of uniform regu-

tions governing the disposal and leasing of land, minerals, and other resources in the State lands will be feasible.

Project execution for the development of public-owned irrigable lands in the delta is a long-time function of the State Domains Administration. Many of these lands have been built up from the Nile floods and are located in the northern delta at the Mediterranean coast. Nearly 200,000 acres of improved irrigated lands were being managed by that Administration in 1954 through rental and contract labor agreements pending disposal. The reclamation work is considered to be very good, but costs have been rather high due to the practice of constructing villages, public buildings, and maintaining lateral canals and drainages. Several agencies are starting additional projects to reclaim lands through irrigation. Responsibility for the public lands outside the valley and delta is only a very recently added function of the State Domain Administration.

Much activity is being exerted to develop and stabilize the entire country. One of the most encouraging experiences was a meeting of officials of four Government agencies in the great Dahkla (inner) and Karga (outer) oases about 400 miles southwest of Cairo. (See accompanying photo.) Not only did these agencies get together in the field, but they visited and discussed problems of the oases in about 30 villages. This was followed by a meeting with the Omdahs (heads of the villages). They were asked for their recommendations on how to improve conditions. When the Omdahs disagreed, they conferred and voted. A major request of the Omdahs was the right for the villagers to own land.

There are about 40,000 residents of these oases,

PUBLIC LANDS. Modern village and public lands improved by Egyptian State Domains Administration in region of Nile Delta.



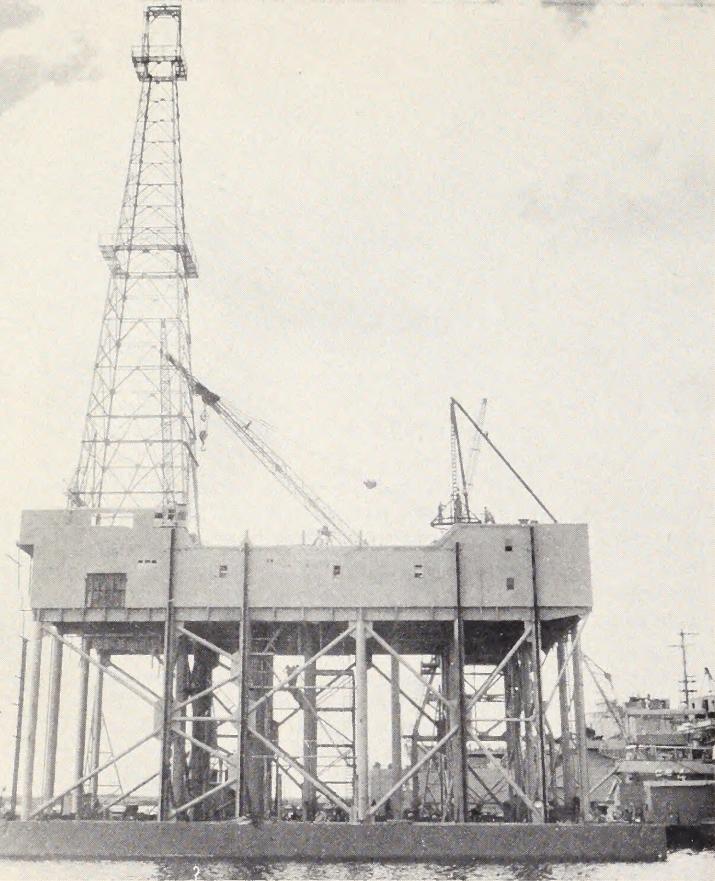
26,000 in Dahkla and 14,000 in Karga. The approximate area irrigated is 18,000 acres, or less than one-half acre per person. These oases are long, narrow depressions in the desert. Each is over 100 miles in length and about 30 miles wide. The escarpment of the desert is 1,600 feet and the floor of the oases, 50 to 600 feet above sea level. The climate is hot, with low humidity. Because of isolation and physical conditions, a very complete economy has developed in the oases except for the surplus population. This will be alleviated through more effective utilization of all the resources.

The improvement of public lands in the desert is gaining headway. At the Ras El Hekma Experiment Station near Mersa Matruh, progress is being made on the development of improved grasses and seeding. Waterspreading demonstrations have been started on this desert pilot project. Sand dunes are a problem in Egypt and some control work with grasses, brush, and trees is underway along the Mediterranean coast on the Sinai Peninsula. There are many additional examples of activities which will eventually improve and increase the demand for the arid lands. Substantial problems involving how and by whom these lands will be utilized are occurring.

The land problems of Egypt, though great, are by no means hopeless. Aggressive and objective steps are being taken to correct them. With an experience of only about 2 years of concentrated attack, it is impossible to predict what will be the degree of success. It is clear, however, that the people who use the land want to own it outright, and that the fellahin and bedouin will utilize their labor, which is their main resource, to improve underdeveloped lands.

ROMAN WELL. Villagers worked 20 years to open this deep Roman artesian well situated in Kharga Oasis, Egypt.





BARGE. Latest type oil drilling barge for offshore explorations in the Gulf of Mexico.

OUR NEWEST FRONTIER

(Continued from page 17)

average monthly production from the Shelf alone of 203,000 barrels. There are, at this writing, 21 rigs operating on the Shelf.

The estimated total production to date from the lands beneath inland waters, the submerged lands and the Outer Continental Shelf, is approximately 38,833,277 barrels.

Particularly interesting is the fact that the total expenditure as of October 31, 1954, for water operations exceeds by five times the amount of revenue recovered from these lands. Technical "know-how" is the key to future profit and the continued development of the Shelf. Also, the high cost of operations ties the future growth of offshore oil production to a constant price for oil. For example, oil exploration in the Gulf of Mexico did not begin its rapid progress until 1947 when the price for 34 gravity crude was raised from \$1.81 per barrel to \$2.76 per barrel. Long-range plans for complete development depend on a price estimate of \$4.50 per barrel. This is based on the average annual 7-percent increase of oil (since 1940).

Without pursuing any further statistics, possibilities are plain. In addition to oil and sulfur leases, there are two oyster shell leases on the Outer Continental Shelf off the coast of Louisiana. From time to time, other industries will probably move in this area as facilities in the coastal areas increase.

The greatest story is yet to be told, but we can be certain that the Shelf is another great frontier that challenges the ingenuity of man. The function of the Bureau of Land Management will be to administer these potentials for the good of our entire country.

End

CAN WE CONTROL HALOGETON?

(Continued from page 19)

In the drier areas of Utah and Wyoming where the annual precipitation is inadequate for crested wheat grass production, forage development projects are being used as a means of controlling halogeton. In Wyoming, contour furrowing and water spreading projects have been built with and without protection fencing. In Utah forage development projects are of two types—water spreading for forage improvement with protection fencing, and conservation control and forage development by the use of protection fencing.

Studies conducted by the University of Nevada and the University of Idaho indicate that by proper management it is possible to improve the vigor and density of the native vegetation sufficiently to prevent invasion by halogeton and even crowd out halogeton, if the native vegetation has not been destroyed. In the contour furrowing projects, it is believed that additional snow runoff and runoff from heavy storms will be collected in the furrows in sufficient quantities to provide plenty of moisture for a vigorous, full stand of grass. In water spreading areas, additional moisture from snow runoff, flash floods, or heavy storms is spread over the land where grass production and other forage is to be encouraged. Protection fences are built around water spreading and contour furrowing projects when they are needed for proper grazing management.

In Utah, protection fences have been built in halogeton areas outside of water spreading and contour furrowing areas for halogeton control through proper management of the area. Improvements in the native range through protection fencing may be a fairly slow process, but inspections made in Utah are encouraging.

Conclusions and recommendations made by the local and State appraisal and reviewing committees are as follows:

1. In general, they commended the BLM on its overall approach to the halogeton problem and its efforts to make an objective appraisal of it.

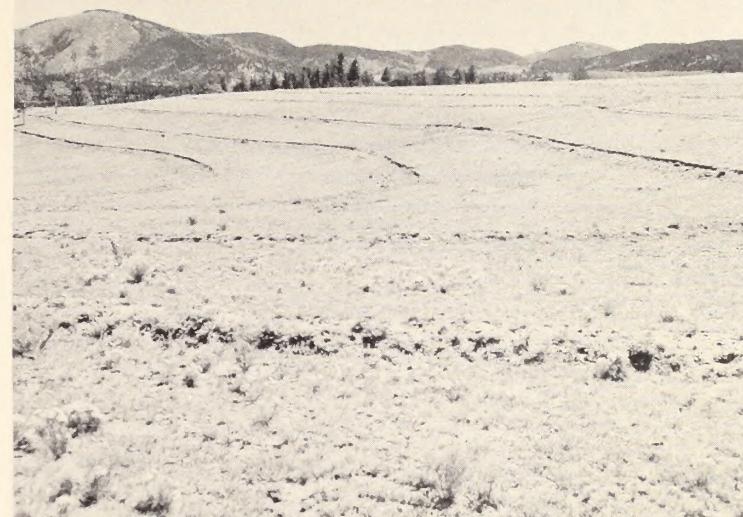
ntrol program so that improvements in the pro-
m might be made.

2. There was unanimous agreement that the halogeton range reseeding program is the most practical and desirable method of controlling halogeton on sites that are adapted to perennial grass production. They recommended that this phase of the program be continued and expanded until halogeton is brought under control and until all adapted sites have been reseeded. It was felt that the overall reseeding program had been very successful, but it was suggested that greater care be exercised in the future in selection of sites and in staking out spots of poor soils within sites to avoid plowing these areas.

3. The chemical control program has been effective in eliminating several small spot infestations and in controlling others so they can be eliminated in the future. In addition, chemical spraying has been effective in reducing seed production and the rate of halogeton spread. Chemical control is recognized as the most practical way to eliminate small spot infestations, but it was also agreed that it is necessary to obtain 100 percent kills each year to eradicate the infestation. Chemical control is expensive and should be restricted to isolated spot infestations where complete kills with resultant eradication is feasible, and more attention should be given to spraying as early as possible, according to various location needs. Better supervision was urged for the spray program and its application timing, as well as timing of later spray applications as needed by the various sites.

4. Control of halogeton through revegetation practices, such as contour furrowing, water spreading, and protection fences, has been confined thus far to Utah and Wyoming. The Utah halogeton reviewing committee endorsed these programs as the most practical approach to halogeton control in the areas not adapted to range reseedings. The committee recommended that the control program be directed toward the provision of an alternate feed supply for livestock to prevent halogeton poisoning, and that more emphasis be placed on conservation range management for development and improvement of native range forage plants through better livestock distribution and seasonal use, conservation, control fencing, water spreading, or forage improvement and water developments.

In Wyoming there was no unanimity of opinion as to the value of contour furrowing and water spreading practices in controlling halogeton. Most of the Wyoming committeemen felt that these projects had not been in operation long



CONTOURING. Halogeton resistance through contour furrowing collects runoff for natural grass growth.

enough to determine their worth. All Wyoming committeemen were highly in favor of conducting a progressive chemical control program on all isolated spot infestations in the State.

The findings suggested that BLM carry out an aggressive survey program on an annual basis to locate and map all halogeton infestations. They also recommended that a greater effort be made to obtain cooperation from other agencies and individuals in reporting new halogeton infestations.

It was recommended that BLM continue to cooperate with the research agencies of the Department of Agriculture and the land-grant colleges in an effort to find better methods of controlling halogeton. In this connection it was recommended that research programs give greater emphasis to the development of a selective spray for halogeton and toward developing a successful and economic method of improving the large expanses of semi-desert areas that are too alkaline to grow crested wheat grass.

The Bureau of Land Management is highly appreciative of the outstanding job accomplished by local and State appraisal and inspection committees. The recommendations listed above and others of lesser importance not included here will be of tremendous value in improving future control programs. The appraisal was completed in a surprisingly short time and with very little expense. This could not have been accomplished without willing and able cooperation from the numerous Federal, State, and local participants. **End**

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